WHAT IS CLAIMED IS:

1. A method for synchronizing location finding measurements in a wireless network, comprising:

receiving transmissions from at least one transmitter at multiple receivers, wherein said multiple receivers are located at predetermined locations with respect to said at least one transmitter;

determining actual times-of-arrival of said received transmissions in response to said receiving;

first computing differences between said actual times-of-arrival for said multiple receivers to determine actual time-differences-of-arrival for pairs of said multiple receivers;

second computing differences between said actual time-differences-of-arrival and theoretical time-differences-of-arrival determined in conformity with said predetermined locations;

estimating error in timebases of said multiple receivers in conformity with said second computed differences; and

correcting measurements of other time-differences-of-arrival of other transmissions in conformity with said estimated error.

2. The method of Claim 1, wherein said estimating estimates drift and offset of internal timebases of said multiple receivers.

3. The method of Claim 1, wherein said correcting comprises adjusting a calculation of a location of a transmitting source that originated said other transmissions in conformity with said estimated error.

4. The method of Claim 3, wherein said other transmissions occurred prior to said estimating, and wherein said correcting is performed on stored time-difference-of-arrival information.

5. The method of Claim 1, wherein said estimating further comprises predicting values of said error as a function of time, and wherein said correcting is performed in conformity with a predicted error in said other time-differences-of-arrival.

6. The method of Claim 1, wherein said correcting is performed by adjusting a timebase within said multiple receivers, whereby an error of said measurements of other time-differences-of-arrival is reduced.

7. The method of Claim 1, wherein said correcting is performed by adjusting a system clock of said multiple receivers, whereby an error of said measurements of other time-differences-of-arrival is reduced.

8. The method of Claim 1, wherein said multiple receivers are organized in groups, and wherein said second computing comprises:

third computing time-of-differences-of-arrival between a primary reference member of each group and other members of said group; and

referencing time-differences-of-arrival between a primary reference member of a first group and a primary reference member of a second group by determining time-differences-of-arrival between said primary reference member of said first group and said primary reference member of said second group and a mutual member of said first group and said second group.

9. The method of Claim 1, further comprising:

collecting a result of said computing as a statistical sample set; and

determining statistics of said sample set in conformity with a statistical model, and wherein said estimating comprises

predicting said error using a predictor associated with said statistical model.

10. The method of Claim 9, wherein said statistical model is a Gaussian model, and wherein said predictor is a Kalman filter.

11. The method of Claim 1, further comprising:

collecting a result of said computing as a sample set; and

smoothing said data using a smoothing filter, and wherein said estimating comprises predicting said error using a result of said smoothing.

12. The method of Claim 1, further comprising evaluating a quality of a result of said estimating, whereby a quality of said synchronizing is determined.

13. The method of Claim 1, further comprising adaptively selecting particular ones of said transmissions, in response to a result of said evaluating, for in said estimating, whereby a quality of said synchronizing is controlled and a processing workload is reduced.

14. The method of Claim 13, further comprising logging a result of said evaluating in an error log at discrete intervals, whereby a user may examine indications of said quality of said synchronization over time.

15. The method of Claim 13, further comprising adjusting an interval of said transmissions in response to a result of said evaluating, whereby said quality of said synchronization is controlled.

16. The method of Claim 13, further comprising adjusting a power level of said transmissions in response to a result of said evaluating, whereby said quality of said synchronization is controlled.

17. The method of Claim 13, further comprising adjusting a channel of said transmissions in response to a result of said evaluating, whereby said quality of said synchronization is controlled.

18. The method of Claim 13, wherein said transmitting is performed by alternating said transmissions between multiple channels, and wherein said receiving receives said transmissions via multiple receivers, wherein each of said receivers selectively receives said transmissions on one or more of said multiple channels.

19. The method of Claim 13, wherein said transmitting is performed by alternating said transmissions between multiple channels, and wherein said receiving receives said transmissions via multiple receivers, wherein each of said receivers receives signals on said multiple channels by alternating a reception channel of said receiving.

20. A wireless network comprising:

at least one transmitter for providing reference beacon transmissions;

multiple receivers, each including a timebase for detecting actual times-of-arrival of said periodic reference beacon transmissions, wherein said multiple receivers are located at predetermined locations with respect to said at least one transmitter; and

a processor coupled to a memory, said memory containing program instructions for execution by said processor, wherein said program instructions comprise program instructions for:

first computing differences between said actual times-of-arrival for said multiple receivers to determine actual time-differences-of-arrival for pairs of said multiple receivers;

second computing differences between said actual time-differences-of-arrival and theoretical time-differences-of-arrival determined in conformity with said predetermined locations,

estimating error in said timebases of said receivers in conformity with said second computed differences, and

correcting measurements of other time-differences-of-arrival of other transmissions in conformity with said estimated error.

21. The wireless network of Claim 20, wherein said program instructions for estimating comprise program instructions for estimating drift and offset of said timebases of said multiple receivers.

22. The wireless network of Claim 20, wherein said program instructions for correcting comprise program instructions for adjusting a calculation of a location of a transmitting source that originated said other transmissions in conformity with said estimated error.

23. The wireless network of Claim 22, wherein said other transmissions occurred prior to said estimating, and wherein said program instructions for correcting operate on stored time-difference-of-arrival information.

24. The wireless network of Claim 20, wherein said program instructions for estimating further comprise program instructions for predicting values of said error as a function of time, and wherein said program instructions for correcting correct said other time-differences-of-arrival in conformity with a predicted error in said other times of arrival.

25. The wireless network of Claim 20, wherein said program instructions for correcting communicate an indication of said estimated error to each of said multiple receivers, and wherein said multiple receivers correct said internal timebases in response to receiving said indication, whereby an error of said measurements of other time-differences-of-arrival is reduced.

26. The wireless network of Claim 20, wherein said program instructions for correcting communicate an indication of said estimated error to each of said multiple receivers, and wherein said multiple receivers correct a system clock of each of said multiple receivers in response to receiving said indication, whereby an error of said measurements of other time-differences-of-arrival is reduced.

27. The wireless network of Claim 20, wherein said multiple receivers are organized in groups, and wherein said program instructions for second computing comprise program instructions for:

third computing time-difference-of-arrival between a primary reference member of each group and other members of said group; and

referencing time-differences-of-arrival between a primary reference member of a first group and a primary reference member of a second group by determining time-differences-of-arrival between said primary reference member of said first group and said primary reference member of said second group and a mutual member of said first group and said second group.

28. The wireless network of Claim 20, wherein said program instructions further comprise program instructions for:

collecting a result of said computing as a statistical sample set; and

determining statistics of said sample set in conformity with a statistical model, and wherein said estimating comprises predicting said error using a predictor associated with said statistical model.

29. The wireless network of Claim 28, wherein said statistical model is a Gaussian model, and wherein said predictor is a Kalman filter.

30. The wireless network of Claim 20, wherein said program instructions further comprise program instructions for:

collecting a result of said computing as a sample set; and

smoothing said data using a smoothing filter, and wherein said estimating comprises predicting said error using a result of said smoothing.

31. The wireless network of Claim 20, wherein said processor and said memory are located in a server coupled in a communications link to said multiple receivers, whereby said server estimates said error.

32. The wireless network of Claim 31, wherein said server corrects said measurements via calculation of locations of other transmitters originating said other transmissions in conformity with said estimated error.

33. The wireless network of Claim 31, wherein said server corrects said measurements by communicating control signals over said communications link to said multiple receivers, said control signals bearing indications of estimated error each associated with a target one of said multiple receivers, and wherein said multiple receivers correct said internal timebase in response to receiving said control signal.

34. The wireless network of Claim 31, wherein said server corrects said measurements by communicating control signals over said communications link to said multiple receivers, said control signals bearing indications of estimated error each associated with a target one of said multiple receivers, and wherein each said multiple receivers correct an included internal clock in response to receiving said control signal.

35. A computer program product comprising signal-bearing media encoding program instructions for execution by a processor within a device coupled to a wireless network, wherein said wireless network includes multiple receivers each including a timebase for detecting actual times-of-arrival of periodic reference beacon transmissions originating from a transmitter, wherein said multiple receivers are located at predetermined locations with respect to said at least one transmitter, and wherein said program instructions comprise program instructions for:

first computing differences between said actual times-of-arrival for said multiple receivers to determine actual time-differences of arrival for pairs of said multiple receivers;

second computing differences between said actual time-differences-of-arrival and theoretical time-differences-of-arrival determined in conformity with said predetermined locations,

estimating error in said timebases of said multiple receivers in conformity with said computed differences, and

correcting measurements of other time-differences-of-arrival of other transmissions in conformity with said estimated error.

36. The computer program product of Claim 35, wherein said program instructions for estimating comprise program instructions for estimating drift and offset of said timebases of said multiple receivers.

37. The computer program product of Claim 35, wherein said program instructions for correcting comprise program instructions for adjusting a calculation of a location of a transmitting source that originated said other transmissions in conformity with said estimated error.

38. The computer program product of Claim 35, wherein said multiple receivers are organized in groups, and wherein said program instructions for second computing comprise program instructions for:

third computing time-difference-of-arrival between a primary reference member of each group and other members of said group; and

referencing time-differences-of-arrival between a primary reference member of a first group and a primary reference member of a second group by determining time-differences-of-arrival between said primary reference member of said first group and said primary reference member of said second group and a mutual member of said first group and said second group.

39. The computer program product of Claim 35, wherein said program instructions further comprise program instructions for:

collecting a result of said computing as a statistical sample set; and

determining statistics of said sample set in conformity with a statistical model, and wherein said estimating comprises predicting said error using a predictor associated with said statistical model.

40. The computer program product of Claim 39, wherein said statistical model is a Gaussian model, and wherein said predictor is a Kalman filter.

41. The computer program product of Claim 35, wherein said program instructions further comprise program instructions for:

collecting a result of said computing as a sample set; and

smoothing said data using a smoothing filter, and wherein said estimating comprises predicting said error using a result of said smoothing.